NPS Form 10-900
Rev 10-90)

VLR-6/19/96

DRAFT

OMB No. 1024-0018

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
REGISTRATION FORM

[illegible] instructions on how to complete the National Register of Historic Places Registration Form (National Register Bulletin 16A). Complete each item by marking "X" in the appropriate box or by entering the information requested. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name Camp A. A. Humphreys Pump Station and Filter Building

other names/site number Building # 1400: Water Filtration Plant
DHR File No. 29-96

2. Location

street & number U.S. Army Ft. Belvoir, 9155 Richmond Hwy. not for publication N/A
city or town Fort Belvoir vicinity N/A
state Virginia code VA county Fairfax code 059 zip code 22060

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1986, as amended, I hereby certify that this _X_ nomination ___ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property _X_ meets ___ does not meet the National Register Criteria. I recommend that this property be considered significant ___ nationally ___ statewide _X_ locally. (___ See continuation sheet for additional comments.)

Signature of certifying official Date

State or Federal agency and bureau

In my opinion, the property ___ meets ___ does not meet the National Register criteria. ___ See continuation sheet for additional comments.

Signature of commenting or other official Date

State or Federal agency and bureau

4. National Park Service Certification

I hereby certify that this property is:

___ entered in the National Register
___ See continuation sheet.
___ determined eligible for the National Register
___ See continuation sheet
___ determined not eligible for the National Register
___ removed from the National Register
___ other (explain:) _____

Signature of Keeper Date of Action

5. Classification

Ownership of Property (Check as many boxes as apply)

___ private
___ public-local
___ public-State
_X_ public-Federal

Category of Property (Check only one box)

_X_ building(s)
___ district
___ site
___ structure
___ object

Number of Resources within Property

Contributing	Noncontributing	
__2__	__0__	buildings
__0__	__0__	sites
__0__	__0__	structures
__0__	__0__	objects
__2__	__0__	Total

Number of contributing resources previously listed in the National Register __0__

Name of related multiple property listing (Enter "N/A" if property is not part of a multiple property listing.)
_N/A_____

6. Function or Use

Historic Functions (Enter categories from instructions)

Cat:	Sub:
_DEFENSE	_military facility
_INDUSTRY/PROCESSING/EXTRACTION	_waterworks

Current Functions (Enter categories from instructions)

Cat:	Sub:
_DOMESTIC	_institutional housing

7. Description

Architectural Classification (Enter categories from instructions)
OTHER: late 19th and 20th century Revivals:
Colonial Revival

Materials (Enter categories from instructions)
foundation CONCRETE
walls BRICK
roof OTHER
other CONCRETE

Narrative Description (Describe the historic and current condition of the property on one or more continuation sheets.)

8. Statement of Significance

Applicable National Register Criteria (Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing)

- _X_ A — Property is associated with events that have made a significant contribution to the broad patterns of our history.
- ___ B — Property is associated with the lives of persons significant in our past.
- ___ C — Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- ___ D — Property has yielded, or is likely to yield information important in prehistory or history.

Criteria Considerations (Mark "X" in all the boxes that apply.)

- ___ A owned by a religious institution or used for religious purposes
- ___ B removed from its original location.
- ___ C a birthplace or a grave.
- ___ D a cemetery.
- ___ E a reconstructed building, object,or structure.
- ___ F a commemorative property.
- ___ G less than 50 years of age or achieved significance within the past 50 years.

Areas of Significance (Enter categories from instructions)
MILITARY
INDUSTRY

Period of Significance 1918-1943

Significant Dates 1918
1936

Significant Person (Complete if Criterion B is marked above)
N/A

Cultural Affiliation N/A

Architect/Builder Construction Division, U.S. Army Corps of Engineers

Narrative Statement of Significance (Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographical References

Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS)
___ preliminary determination of individual listing (36 CFR 67) has been requested.
___ previously listed in the National Register
___ previously determined eligible by the National Register
___ designated a National Historic Landmark
___ recorded by Historic American Buildings Survey # _____
___ recorded by Historic American Engineering Record # _____

Primary Location of Additional Data
___ State Historic Preservation Office
___ Other State agency
_X_ Federal agency
___ Local government
___ University
___ Other
Name of repository: _Directorate of Public Works, Fort Belvoir, Directorate of Plans, Training & Mobilization, Fort Belvoir

10. Geographical Data

Acreage of Property _approximately 2 acres

UTM References (Place additional UTM references on a continuation sheet)

	Zone	Easting	Northing		Zone	Easting	Northing
1	18	312220	4286380	2	18	312240	4286340
3	18	312180	4286320	4	18	312140	4286380

_x__ See continuation sheet.

Verbal Boundary Description (Describe the boundaries of the property on a continuation sheet.)

Boundary Justification (Explain why the boundaries were selected on a continuation sheet.)

11. Form Prepared By

name/title_Lance Gilmore, Environmental Scientist_____

organization_Paciulli, Simmons & Associates, Ltd._____date _February 1996

street & number_1821 Michael Faraday Drive, Suite 200telephone_703-742-7870____

city or town_Reston_____ state_VA_ zip code _22090_____

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps

USGS map (7.5 or 15 minute series) locating property.
Sketch map Building #1400, Water Filtration Plant.

Photographs

Representative black and white photographs of the property.

Additional items (Check with the SHPO or FPO for any additional items)

Property Owner

(Complete this item at the request of the SHPO or FPO.)

name_Department of the Army, U.S. Army Fort Belvoir_____

street & number_____ telephone_____

city or town_Fort Belvoir_____ state _VA_ zip code _22060 ___

Summary Description

The Camp A. A. Humphreys Pump Station and Filter Building, located along U.S. Route 1 at the southern edge of Fort Belvoir, is a single-story, rectangular structure erected in 1918 by the Construction Division of the Army Corps of Engineers. This elegant, buff-brick industrial building features decorative Colonial Revival detailing. Principal components include a one-story brick pumphouse, built in 1936, and three concrete settling basins, attached to the west side. A total of seven other structures, built between 1935 and 1942 were also part of the complex, two of which are still extant. The Water Filtration Plant was converted into a homeless shelter in 1986 using sympathetic restoration on the exterior and careful renovation on the interior.

Architectural Analysis

The Camp A. A. Humphreys Pump Station and Filter Building (#1400) is a one-story, five-bay, buff-brick, rectangular building measuring 60' by 89'. With its parapeted flat roof and simple, rectangular form, the Water Filtration Plant, as it is commonly known, represents a common early-twentieth-century industrial building type embellished with Colonial Revival detailing. Built by the Construction Division of the Army Corps of Engineers in 1918, the banked, stretcher-bond brick structure with one brick interior chimney sits on a concrete foundation. Colonial Revival decorative features include a round-headed doorframe composed of concrete keystone and springers with an arch of brick voussoirs outlined by a single protruding header course. This doorframe surrounds a fanlight over a pair of four-paneled wooden double entry doors. A molded concrete cornice above corbeled coursing forming an 18" flush pilaster on each corner, and eight-over-two double hung windows with flat-arched lintels with concrete keystones. Alterations include the construction of a five-by-three bay addition on the rear elevation and the replacement of the front facade's original buff brick parapet with a red brick parapet during the 1940s. Attached to the west side of the building are three concrete settling basins, the measurements of which total 52' by 89'. Surrounded by a water storage tank and seven small outbuildings as late as 1986, the Water Filtration Plant is now encompassed by a parking area, driveway, service area and sidewalk.

A one-story brick, one-bay brick pumphouse (#1424), built in 1936, is located about 25 feet from the Filtration Building. It measures approximately 12' by 15' with a flat roof. This pumphouse is detailed with Colonial Revival ornament with roof cornice and brick pilastered corners very similar in design to the Filtration Building. This structure has a concrete foundation and is currently used for storage.

Seven buildings, built before 1942, completed the water filtration plant and pump station complex. The five buildings that were demolished in 1986 are recorded and described in Section 8. The water filtration complex ceased operation by 1970, and all large mechanical equipment was removed from the building. The abandoned building was subsequently allowed to deteriorate. In 1986, the facility was leased to Fairfax County and renovations, conducted by Fort Belvoir in accordance with the Secretary of the Interior's Standards and approved by the SHPO and the Advisory Council, were undertaken to convert the building into a homeless shelter, now called the Eleanor U. Kennedy Shelter for the Homeless.

Exterior renovation work conducted in 1986 as a part of the project to convert the Water Filtration Plant into a homeless shelter included the repair of the existing brick buff walls, red brick parapet, cornice, jack arches and window keystones; replacement in kind of the doors and eight-over-two windows; and the

addition of two doors and a handicap ramp to satisfy fire, safety and accessibility codes. To retain the historic character of the Water Filtration Plant, the fire escape was attached to the west side of the building where it is out of sight from the front, rear, and east side, and an existing window was converted to the fire escape door. The air conditioning and heating units, which were originally designed to be installed on the roof, were placed within the concrete settling basins on the building's west side to avoid a visual impact. The security vestibule was built within the confines of the existing structure rather than enclosed within a separate structure attached to the front facade.

Interior work focused on the conversion of the single-story, open interior into a two-story building with a ground floor containing a kitchen, dining room, offices, and laundry and bathroom facilities, and a first floor containing a lobby, sitting area, offices, and dormitory facilities. Care was taken during the interior work to ensure that interior changes were not visible from the exterior. For example, windows that were affected as a result of the addition of shower facilities were blackened with paint rather than closed with brick infill. Both interior and exterior design work was coordinated by the SHPO and a Determination of No Adverse Effect was concurred with by the SHPO and the Advisory Council (12 June 1986).

Statement of Significance

Built in 1918, the Camp A. A. Humphreys Pump Station and Filter Building is the Post's oldest permanent structure and one of the few remaining vestiges of Camp A. A. Humphreys. It illustrates both the development of support facilities as part of the construction of World War I cantonments and the increasing understanding and importance of sanitation in the United States during the early twentieth century.

The Camp A. A. Humphreys Pump Station and Water Filter Building is eligible for the National Register under criterion A, events that have made a significant contribution to the broad patterns of our history, because it played a significant role in the World War I U.S. Army mobilization and in the Army's construction of permanent water purification and supply systems as part of the development of World War I cantonments.

The Water Filtration Plant and nearby Pumphouse are industrial buildings with Colonial Revival styling. Because of their proximity to Accotink Creek, their primary function was to supply the installation with clean water from 1918 until approximately 1970. When the water in Accotink Creek became unsuitable, the facility ceased operation, its machinery was removed, and it was converted into a storage facility. In 1985, a project was initiated to convert the structure into a homeless shelter. Interior and exterior renovation work was conducted in accordance with the Secretary of the Interior's Standards during 1985-86 and the South County Community Shelter (now the Eleanor U. Kennedy Shelter for the Homeless) began operation on December 6, 1986.

Historical Background and Significance

The filtration of drinking water was widely practiced in Europe by the early nineteenth century in the large population centers in England and on the Continent. In the United States, water filtration was first tested in St. Louis during the mid-nineteenth century, following the preparation of a report on filtration by J.P. Kirkwood, of the St. Louis Water Board, published in 1869. As a result of the high cost of their construction, water filtration systems were not widely used in America until the late nineteenth century.

The cholera and typhoid fever epidemics of the 1890s rekindled public interest in water purification. Experiments conducted in Cincinnati, Pittsburgh, and Louisville resulted in the popular acceptance of water filtration as an essential and beneficial municipal service and resulted in the construction of water filtration systems in cities across the nation (Hazen 1907:iii-v, 4, 8).

A book entitled The Filtration of Public Water Supplies, which was first published in 1900, describes construction and operation of water filtration systems during the late nineteenth century. The filtration process consisted of several steps during which water was: 1) diverted from its natural source into a settling tank in which the large particulates were allowed to settle; 2) pumped into a filter tank which consisted of levels of sand and gravel above a drain; and 3) then pumped into a distribution system (Hazen-1907:5-8).

The World War I mobilization of the U.S. Army and the construction of cantonments began in 1918. By that year the construction of municipal waste disposal and water filtration systems had become standard practice nationwide and the cantonment plans included water purification systems as standard components. As the responsibility for these facilities fell under the jurisdiction of the U.S. Army Medical Corps, a medical officer was initially assigned to each camp to oversee construction of the water filtration systems. On July 2, 1918, the Maintenance and Construction Division of the Army Corps of Engineers was established. Its purpose was "the operation of general utilities, and of the maintenance and repair of roads, wharves, buildings, water works and sewage plants" (Chamberlain and Weed 1926:223).

A study conducted by the water supply officers of the Construction Division, in cooperation with the Council of National Defense, arrived at plans and specifications for water filtration systems constructed at the World War I cantonments. The plan called for water works to provide 55 gallons per capita for daily use, pressure to be maintained at 60 to 85 pounds per square inch, and a water line to be laid out in a "straight line," "square," or "horseshoe" pattern with main, valves, and fire hydrants aligned along the route (Chamberlain ad Weed 1926:223).

Although the adequacy of the water supply was a consideration in the selection of construction sites for the World War I cantonments, it was not one of primary selection criteria. As a result, the below-ground water supplies proved to be inadequate to supply the amount of water needed in many of the cantonments. In their report on sanitation, Chamberlain and Weed cite the example of Camp Dix, near Wrightsville, N.J. The well water supplies were rapidly exhausted, making it necessary to construct a water purification plant to purify water from Rancocas Creek. A similar chain of events occurred at Camp A. A. Humphreys during its first year of operation (Chamberlain and Weed 1926:235-236).

Recognizing the need for a "safe" and aesthetically satisfactory water supply," the Army expended large sums of money on the construction of water purification and sewage systems. Of the 275 water supply projects undertaken by the U.S. Army during World War I, 111 of them were located on newly built camps, cantonments, and aviation stations. Precautionary features incorporated into the design of the Army's water filtration plants included: 1) the provision of covers for all the storage reservoirs to prevent accidental or intentional pollution and the growth of algae; 2) the provision of chlorinators to all cantonments and camp, even when the water supply was regarded as safe; and 3) prohibition of the use of wells in shallow strata, on inhabited watersheds, or in other locations in which it was possible that the water would become contaminated (Chamberlain and Weed 1926:228). Regular testing for E. coli bacteria was conducted at

water testing facilities established at each of the Army camps, as well as at eleven laboratories situated throughout the country for that purpose (Chamberlain and Weed 1926:235-236).

The goal of the Army's construction program was to ensure that the troops trained for military service were not affected by typhoid and paratyphoid fevers, cholera, and dysentery. As a result of the Army's effort in water treatment and testing, as well as in immunization, incidences of these diseases were kept to a minimum in the World War I training camps. The Army's sanitation efforts were considered extremely successful by the Surgeon General. Of a total of 2,301,371 men trained between 1917 and 1918, only 74 deaths from typhoid fever and 20 deaths from dysentery, were recorded. Many of the men who died of typhoid fever were known to have contracted the disease prior to their arrival at the camps (Chamberlain and Weed 1926:236-237).

The construction of Camp Humphreys began in September 1917 and the first troops began to arrive for training in May 1918. Initially, the sole source if potable water was from ground wells, which, with the exception of one, furnished a safe supply. However, during the summer of 1918, the numbers of troops increased from 7,500 in May to almost 25,000 in September. This rapid population increase necessitated the procurement of water from surface sources (War Department 1919:1732). In August 1918, a decision was made to construct a water filtration plant to purify water from Accotink Creek. According to the report of the Surgeon General:

> In August additional water supply was taken from Accotink Creek. It was filtered and treated with chlorine. From the filtering plant the water was pumped to a standpipe which held 300,000 gallons. The supply was ample (War Department 1919:1732).

The buildings contributing to the complex at Fort Belvoir are as follows:

1. Building #1400; Water Filtration Plant
Built in 1918, 60'x89', is a one story, five bay, brick rectangular building, with a parapeted flat roof, and one brick interior chimney.

2. Building #1424; Pumphouse
Built in 1936, 12'x15', with brick walls, a flat roof, concrete foundation. Located about 25 feet from Building #1400, it is currently used for storage.

Seven associated buildings which once contributed to the water filtration plant an pump station complex are no longer extant. The descriptions of the following were found in Real Property records at Fort Belvoir.

1. Building #1404; Storage Area
Built in 1941, 100 square feet made of clay block. Located to the east of Building #1400. Demolished circa 1985. [Contributing]

2. Building #1405; Storage Area
Built in 1941, 1800 square feet, made of clay block. Located east of Building #1400. Demolished circa 1985. [Contributing]

3. Building # 1407 Transformer Vault
Built c. 1935, 9'x11', with brick walls, a slate roof, concrete floor, and foundation, one door, no windows. Located east of Building #1400. Demolished after 7/86. [Contributing]

4. Building #1408; Water Storage Tank
Built c. 1941, overall height 59', with a steel surface and concrete base footings. Located to the south of Building #1400. Demolished after 7/86. [Contributing]

5. Building #1411; Pumphouse
Built c. 1942, 10'x10', with brick walls, concrete floor and foundation, concrete floor and foundation, concrete lintels, flat roof (which at one time contained an attached thirteen-foot-high wooden tower), one door, one window. Located to the south of Building #1400. Demolished after 7/86. [Contributing]

6. Building #1421; Booster Pumphouse
Built c. 1942, 8'x14', with buff brick walls; concrete floor, roof and foundation; one door, no windows. Located to the north of Building #1400. [Contributing]

7. Clear Well
Built c. 1951, concrete structure, one metal door, no windows. Located south of Building #1400. [Non-contributing]

Bibliography

Chamberland, Co. Weston P. and Lt. Col. Frank W. Weed. The Medical Department of the United States Army in the World War. Volume IV, Sanitation. Government Printing Office, Washington D.C., 1926.

Hazen, Allen. The Filtration of Public Water Supplies. John Wiley and Sons, New York, NY, 1907.

Fort Belvoir, Virginia. Directorate of Engineering and Housing, Plans and Files.

National Register of Historic Places Registration Form, prepared by Barbara B. Engel (1986)

President's and National Historic Preservation Awards Submission, prepared by Barbara Engel (1989)

Soil Systems Inc., Cultural Resource Survey and Evaluation at Fort Belvoir, Virginia (1983)

War Department. War Department Annual Reports, 1918. Volume I, Report of the Construction Division. Government Printing Office, Washington D.C., 1918.

Verbal Boundary Description

The Water Filtration Plant property is bounded by UTM Reference Numbers:

A: 18/312220/4286380
B: 18/312240/4286340
C: 18/312180/4286320
D: 18/312140/4286380

The boundary begins with UTM A, the northeasterly boundary point of the quadrant, which lies just west of Pohick Road, continues slightly southeast along a chain link fence to UTM B, it goes west along the fence to UTM C, which was formerly just beyond the SW corner of the building #1411. From here it follows the fenceline north and then northwest close to the bank of Accotink Creek to UTM D, then follows the fence east and southeast to point A.

(UTM points are labeled on enclosed detail map from the USGS Fort Belvoir quad.)

Boundary Justification

The boundaries are drawn to include all the resources historically related to water acquisition and filtration at the Water Filtration Plant at Fort Belvoir. All to the recorded sources are surrounded by a chain link fence.

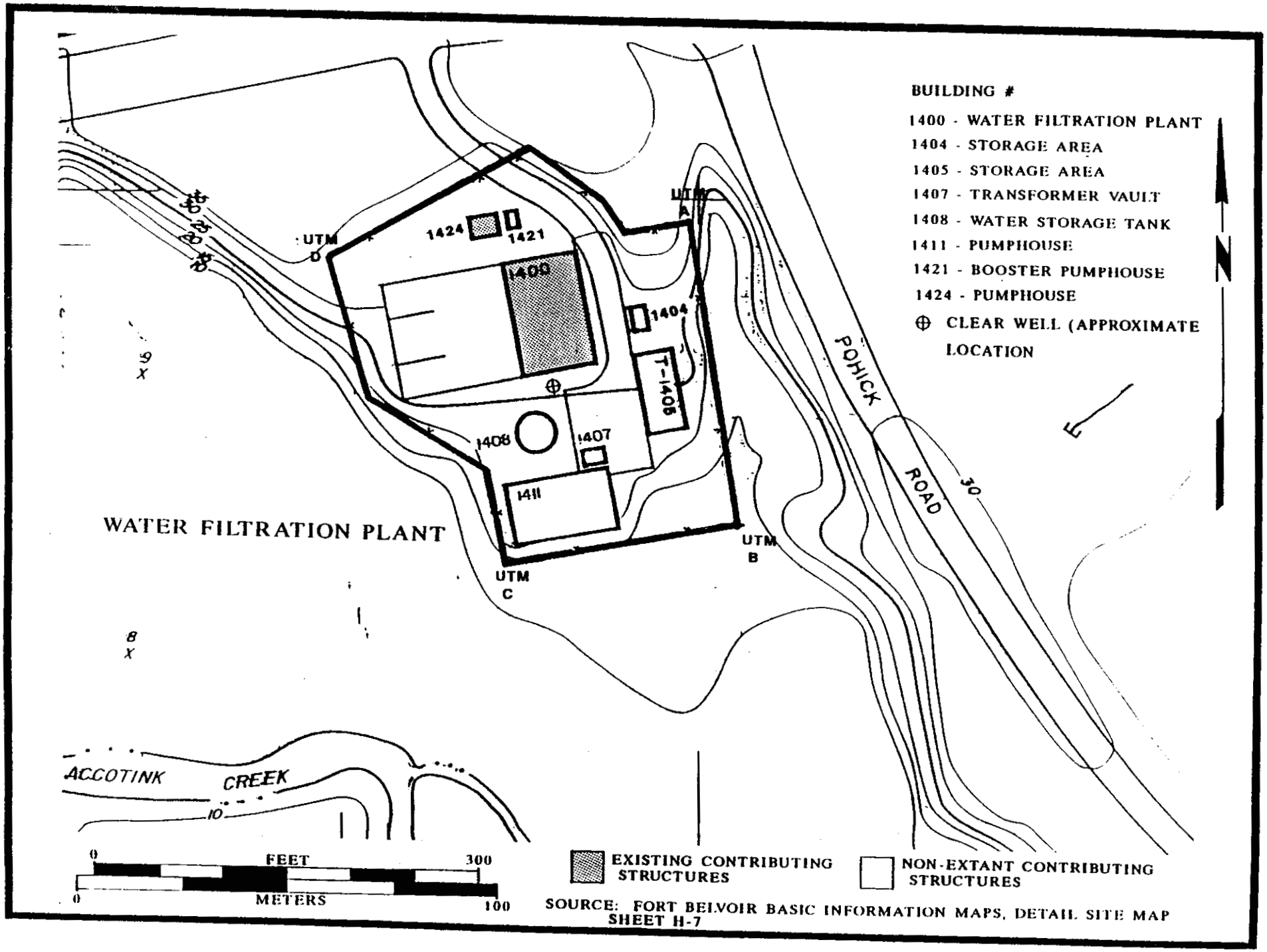
Form Prepared By

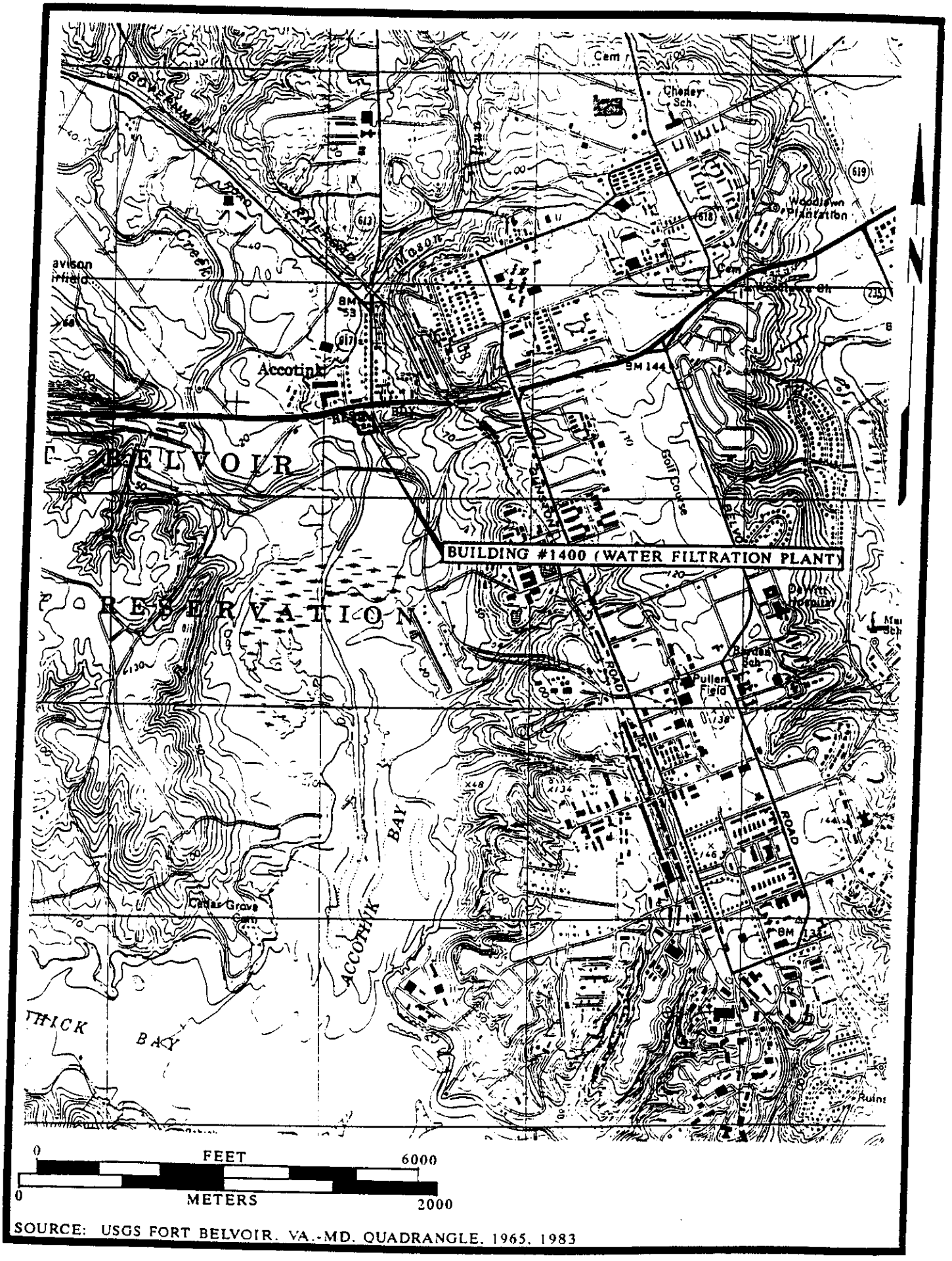
Form was previously prepared by the following:

September 1986
Amy Friedlander, Historian
Soil Systems, Inc.
711 Pendelton St.
Alexandria Virginia 22314

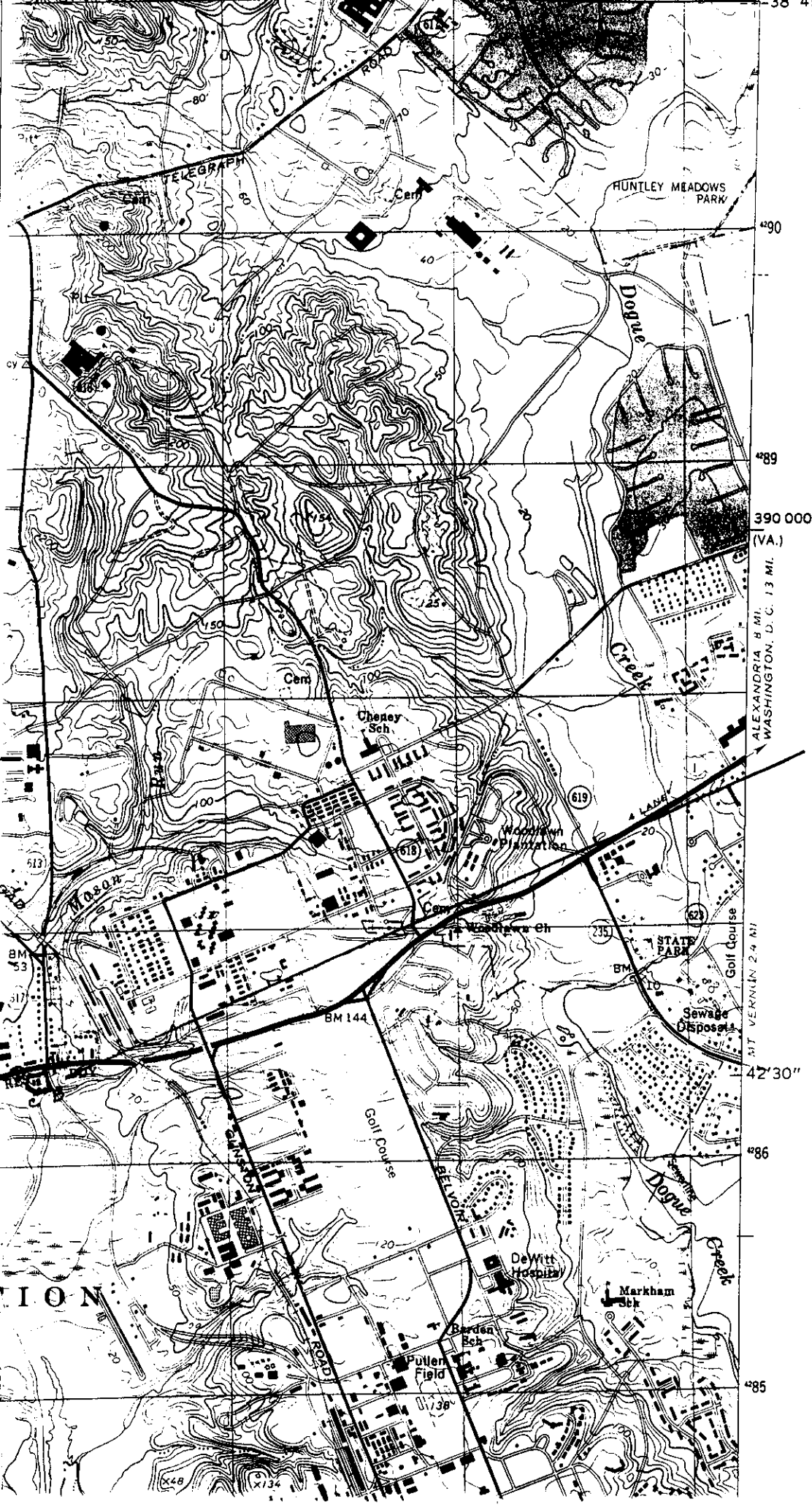
Barbara R. Engel, Environmental Specialist
U.S. Army Engineer Center and Fort Belvoir
Fort Belvoir, Virginia 22060

February 1992
Sheryl N. Hack, Preservation Planner, Kenneth Baumgardt, Historian,
and Sandra DeChard, Preservation Aide
MAAR Associates, Inc.
9 Liberty Plaza
P.O. Box 655
Newark, Delaware 19715-0655


BUILDING #
1400 - WATER FILTRATION PLANT
1404 - STORAGE AREA
1405 - STORAGE AREA
1407 - TRANSFORMER VAULT
1408 - WATER STORAGE TANK
1411 - PUMPHOUSE
1421 - BOOSTER PUMPHOUSE
1424 - PUMPHOUSE
⊕ CLEAR WELL (APPROXIMATE LOCATION
WATER FILTRATION PLANT
UTM A
UTM B
UTM C
UTM D
1424
1421
1400
1404
T-1405
1408
1407
1411
POHICK ROAD
ACCOTINK CREEK
0 FEET 300
0 METERS 100
EXISTING CONTRIBUTING STRUCTURES
NON-EXTANT CONTRIBUTING STRUCTURES
SOURCE: FORT BELVOIR BASIC INFORMATION MAPS, DETAIL SITE MAP SHEET H-7



SOURCE: USGS FORT BELVOIR, VA.-MD. QUADRANGLE, 1965, 1983


Fort Belvoir 7.5
38°45
HUNTLEY MEADOWS PARK
4290
Dogue Creek
4289
390 000 FEET
(VA.)
ALEXANDRIA 8 MI.
WASHINGTON, D.C. 13 MI.
Camp A.A. Humphreys Pump Station
Fairfax County, Virginia
A 18/312220/4286280
B 18/312240/4286240
C 18/312180/4286320
D 18/312140/4286280
Cheney Sch
Woodlawn Plantation
Woodlawn Ch
STATE PARK
Golf Course
Sewage Disposal
BM 144
Mason
Belvoir
Fairfax
DeWitt Hospital
Markham Sch
Rerden Sch
Putlen Field
Sewage Disposal
4286
4285
42'30"
MT VERNON 2.4 MI.
CONVERSION SCALES
Feet
Meters
15000
14000
13000
12000
11000
10000
9000
8000
4500
4000
3500
3000
2500